ABSTRACT:

With the advent of digital medical imaging, implementation of automated image processing has been explored for a number of years. Nevertheless, to date, exploration in the computer-aided digital medical imaging processing remains confronting with numerous challenges and unsolved technical issues. Radiographic hand bone segmentation is one of them. The most common bones used in skeletal age maturity assessment are the hand and wrist. With the intent of constructing an automated assessment system which can significantly enhances the efficiency of the assessment, the technique of hand and wrist bone segmentation is the first and most crucial step before proceeding to the bone age analysis. However, it is difficult to segment the bone from the soft tissue area in radiograph. In this paper, a novel method of GLCM based adaptive crossing reconstruction (ACR) k-mean clustering method is proposed to segment the hand bone from the soft tissue area in radiograph. This approach start by dividing the image into several vertical bands and into several horizontal bands subsequently, the pixels of each region are k-means clustered with the feature of pixel's intensity followed by performing the GLCM texture analysis .Eventually, the different sections will be reconstructed based on the texture analysis result. By dividing the images into multiple regions and reconstructed again based on texture analysis, the bone can be segmented from soft tissue region more effectively compared to global segmentation. However the result is not optimized due to the reason that there are a lot of parameters that can be altered to obtain better result at the price of computational performance.